FARM INDEX

U.S. Department of Agriculture
October 1976

Outlook

As the curtain rises next month on the 55th National Agricultural Outlook Conference, the spotlight falls on agricultural policy and what the newly elected administration will do.

Time: Nov. 15-18.

Place: USDA's Jefferson Auditorium at 14th and Independence Ave., Wash., D.C. Open to the public.

Meantime, the eyes of ERS outlookers are staring at the iffy feed grain picture. It's a fair assumption that production of the "Big 3"—corn, sorghum, and soybeans—won't come up to earlier expectations.

The September 1 crop report put the corn crop at 5.9 billion bushels, down 5 percent from August 1; the sorghum crop at 710 million bushels, down 10 percent; and the soybean crop at 1.3 billion bushels, down 5 percent.

If you play the averages, however, this is a good crop, matching last year's record for the total feed grain output, including the minor grains.

All kinds of disasters could strike the 1976 feed grain crop before it's in the bin, but the odds are otherwise. In fact, the final outcome could be much better than what the forecasts show. For example, the corn crop over the last 10 years panned out to be bigger than the September 1 forecast in 6 of those years, by an average of 254 million bushels. The soybean crop was bigger in 4 years, by an average of 47 million bushels.

Chances are good that corn production will rack up another record this year, despite the downward revisions from earlier forecasts. Says the chairman of ERS's Outlook and Situation Board: "If we had a really short crop—say, it dipped to 5.5 billion bushels—then we could expect serious impacts on the livestock sector. We could see a liquidation of livestock and an increase in meat supplies in the next 6 months. But that's unlikely to happen."

There's no question that users of American feed grains—here and overseas—are bracing to tighten their belts, at least more so than they were a few months back.

Fortunately, feed grain supplies in the overseas market are in better shape than last year at this time, in the U.S.S.R. in particular, so the buying from abroad will be less hectic. Still, ERS outlookers expect keen competition for U.S. grains this year.

At home, higher prices in view for our mainstay feed grain—corn—might spur greater feeding levels for wheat, and there's an abundance of that, with wheat production in 1976 the highest on record.

Steeper feed grain prices should also mean a slight improvement in farm incomes than what economists saw several months ago, when net income for 1976 was estimated at around $25 billion.

The question many are asking is what will happen to food prices at the retail level as a result of the reduced prospects for feed grains?

If anything, the smaller-than-expected feed grain crop could have a dampening effect on retail prices for livestock products—red meats and poultry—because farmers could decide to market their animals sooner than they planned. That would hold true only in the short run, however.

Retail meat prices next year could ease upward. Though climbs in beef prices will be moderate, they will more than offset declines expected for pork.

This might mean that retail food prices overall, previously forecast at 3 to 4 percent, for the first half of 1977, will come closer to the higher figure than the lower.

INCORRECT ISSUE NUMBER
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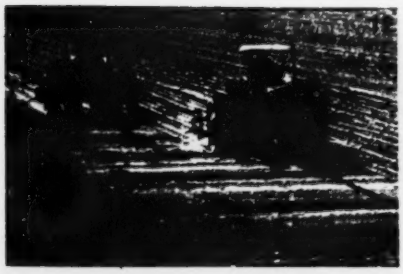

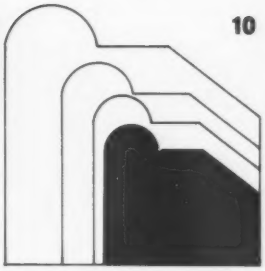

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Food Poisoning and Home Cooking

Many American families may be prime candidates for a case of food poisoning.

An ERS nationwide survey of 2,503 households revealed that 63 percent of those sampled conducted at least one "high risk" practice in handling, preparing, and storing selected meat and poultry products.

Most of these "high risk" households gained that designation because homemakers indicated that they had left cooked meat or poultry at room temperature for more than 2 hours, apparently thinking that cooked meat or poultry is safe from bacterial growth at such temperatures.

Germ haven. In fact, cooked meat and poultry left out at room temperature can become a haven for

bacterial growth which can cause illness.

Some homemakers also seem oblivious to their individual responsibilities for hygienic food preparation. About two-thirds of those surveyed were unaware of potential health hazards in handling raw meat and poultry—possible hosts to harmful bacteria—when such items are prepared with other foods. Cross contamination of bacteria from the raw meat and poultry to side dish ingredients can occur if precautions aren't taken to thoroughly wash hands and utensils immediately.

Safe Storage. Even "safe" storage in the refrigerator entailed potential problems. Thermometers placed in the refrigerators of households sampled found that 32 percent were operating at temperatures of 45 degrees or higher, temperatures not cool enough to check bacteria.

ERS researchers quickly emphasize that the "high risk" designation doesn't, by any means, indicate that such households will inevitably suffer food poisoning. Instead, the designation means that those households have an unnecessarily high potential of sickness due to possible contamination of food.

Many poisoned. The danger of food poisoning to Americans is substantial. Although the number of cases documented by the U.S. Public Health Service ranged from 28,568 cases in 1969 to 12,447 in 1973, most food-related illnesses probably aren't reported. Estimates of actual food poisoning cases range from 2 million to 10 million annually, according to the Center for Disease Control.

The Cast of Villains

Here's the cast of "villains" in food poisoning, the four types of bacteria most often responsible:

Salmonellae: Often found in meat, fish, and poultry, and in certain dairy products. Some of the 1,500 common strains of salmonellae flourish in intestinal tracts of animals, birds, and humans, but they can survive and grow in other environments. Salmonellae thrive best in a low-acid, moist food at 50-115 degrees temperature. The bacteria die when food is cooked at 140 degrees for 10 minutes. Foods most frequently involved are those containing raw eggs, bakery custards, poultry, beef, and pork.

Symptons of salmonellae poisoning: diarrhea, abdominal cramps, headache, chills, fever, and vomiting.

Clostridium perfringens: Found in human and animal intestinal tracts, and in the soil. These microorganisms grow best at temperatures between 45-130 degrees, and are most commonly found in meat, especially meat pies, stews, reheated meats, and gravies from beef, turkey, or chicken. Undercooked meat may be the cause of such poisoning, but, more often, the cause is traced to improper cooling of cooked foods, especially meat and poultry with gravy, and beef and chicken stews.

Symptons of clostridium perfringens include abdominal cramps, diarrhea, and nausea, but usually without vomiting.

Staphylococcus aureus (staph): Can be found everywhere, but live mostly on the skin or in the nose and throat of warm-blooded animals. They can be found in healthy people who are unaware of the bacteria. Cuts on a person's hands often provide transfer of the infection.

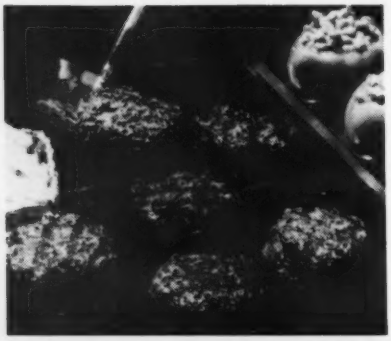
When staph grows extensively on food, it produces a toxin that is extremely resistant to heat. The toxin causes stomach and intestinal disturbances, usually within 2 to 4 hours after consumption. Staph bacteria may thrive on custard and cream pastries; meat, poultry, egg, or potato salads and salad sandwiches; sliced meats, and other meat products left at room temperature for several hours.

Symptons can be violent: severe nausea, cramps, vomiting, diarrhea, and prostration.

Clostridium botulinum: Fortunately, the botulinal spores produce the lowest incidence of poisoning.

The spores produce the potentially fatal botulism toxin only in surroundings protected from air and low in acidity. While boiling kills most other living organisms, botulinal spores must be destroyed by sterilization under pressure at temperatures high above the boiling point. Containers with low-acid goods are potential environments for the production of this sometimes deadly toxin.

Symptons include double vision, difficulty in swallowing, dry mouth, constipation, and sometimes vomiting. Although incidence of botulism is low, the death rate is high: perhaps a fourth to a third of its victims die.



Many of the reported cases have been traced to foods prepared or eaten in the home.

In the survey, which is based on interviews conducted in 1974, a household was termed "high risk" if the homemaker did one or more of the following undesirable practices the last time she cooked each of these foods:

- Cooked hamburger rare.
- Left cooked beef roast, pork roast, turkey, or chicken at room temperature for more than 2 hours.
- Left salad (tuna, chicken, turkey, or egg) sandwiches at room temperature for more than 2 hours.
- Kept beef roast, turkey, pork, or chicken leftovers in the refrigerator at above 45 degrees.
- Stuffed a turkey a day or more in advance of roasting it.
- Stored leftover stuffing in a turkey.
- Cooked a turkey partially at one time, and completed cooking later.

Half erred once. A study of survey responses found that about half of the 63 percent of the households that were classified as "high risk" committed only one of the undesirable practices, another 27 percent committed two, 20 percent indicated three or four such practices, and the remaining 4 percent committed five to eight of these "high risk" practices.

Most of the "high risk" households—66 percent-made this mistake: They left cooked meat or poultry salad sandwiches at room temperature for more than 2 hours.

A close examination of the characteristics of "high risk" households revealed a perhaps surprising dominant trait: The homemaker is likely to be younger, better educated, with a higher household income, than those who did not engage in "high risk" practices.

Characteristics. The breakdown of "high risk" household homemaker characteristics shows that 67 percent of the homemakers under 30 years old, and 68 percent of those 30 to 49 years old conducted high risk practices. Only 43 percent of those 65 and older committed such practices.

In education, those with grade school training or less who ran a "high risk" comprised only 54 percent, while 67 percent of high school graduates and 64 percent of those with at least some college education engaged in "high risk" practices.

In household income, the proportion of "high risk" households increase steadily with income: Only 51 percent of households earning less than $3,000 gained the "high risk" designation, compared with 69 percent of those earning $15,000 and more.

Regional difference. "High risk" practices were proportionally higher in the Northeast, with 70 percent gaining this classification, and lowest in the North Central, with 54 percent.

Some of this variation may be due to economic restraints. Older, less educated, and low-income households are less apt to serve a whole turkey or beef and pork roasts.

Now, let's take a look at the different food products that were examined in the survey.

Hamburgers. This favorite budget stretcher, along with ground meat patties, was prepared by 95 percent of those surveyed, but only 4 percent indicated that they cooked hamburgers rare—one of the "high risk" practices.

Turkey. This item probably leads the pack in suscept ibility to "high risk" practices. About 60 percent indicated that they had prepared a whole turkey during the previous

year, and 89 percent of them cooked stuffing with it.

Salmonellae, which may be found in fresh turkey, may contaminate the stuffing and survive if the bird is inadequately cooked.

For safety, the stuffing should be exposed to temperature of at least 165 degrees to destroy the salmonellae. Since stuffing is protected by the bird's cavity, it takes longer for it to reach this temperature. A meat thermometer should be inserted into the center of the stuffing to determine when heat is sufficient. Risk is also higher when stuffing is packed tightly, thus resisting the heat.

Advanced stuffing also increases the risk by allowing bacteria time to multiply.

Turkey leftovers present another problem because of the likelihood that the cooked meat may be left at room temperature for more than 2 hours. Gravy should also be boiled or simmered when reserved.

Beef Roast. About 73 percent of those surveyed had served oven-roasted beef during the preceding year, with 18 percent of them admitting they had left the cooked roast at room temperature for 2 hours or more.

Pork Roast. About half of the respondents cooked pork roast, and 14 percent of them left their cooked roasts at room temperature for 2 hours or more. Only 1 percent cooked pork roast rare or medium rare.

Chicken. Of the 94 percent who reported cooking chicken in the past year, 13 percent left the cooked bird at room temperature for 2 hours or more.

*Salad Sandwiches.*Chicken, tuna, turkey, or egg salad sandwiches were prepared to be taken to work or school for lunches by 34 percent of the homemakers. About 85 percent of them had left the sandwiches at room temperatures for more than 2 hours.

Even homemakers who try to maintain safe practices are sometimes thwarted by their refrigerators. About a third of the households had refrigerators that did not cool food below the safe 45-degree mark.

Causes probed. After establishing that many households engage in unsafe practices in food handling, the survey probed the reasons for such errors. In the process, many widespread—and sometimes potentially dangerous—misconceptions were found.

Among some of the widespread misconceptions concerning food safety principles were:

- Some 63 percent thought that it was unlikely for USDA-inspected meat and poultry to carry harmful bacteria. In fact, since salmonellae bacteria are present in the environment—and since it isn't economically practical to produce and market sterile fresh meat and poultry products, USDA government inspection procedures do not include provisions for testing or regulating the presence of salmonellae on these products.

- About a third weren't concerned with the possible effect of an uncovered cut—a possible source of staphylococcal infection—coming into contact with fresh meat or poultry.

- In picnic situations, many homemakers would consume various food items left in situations where the food could not be kept very hot or very cold for 3 hours. Only 27 percent would pass up fried chicken, while 79 percent would avoid custard pie under those conditions.

- Although refrigeration only checks bacterial growth, a fifth of those surveyed thought it completely stopped growth, and that freezing killed bacteria. About two-thirds erroneously thought that cooked foods should be left out to cool before being refrigerated. Actually, cooked foods should be served soon after cooking, or refrigerated promptly.

- In determining whether a canned food was safe to eat, 30 percent said they would taste the product. This is a potentially fatal act.

- Between 32 and 44 percent were unable to correctly match the terms salmonellae, botulism, trichinosis, or staphylococcas with its most common source.

Note of dismay. The study concludes in a note of dismay: "Homemakers may place undue reliance upon government inspection functions for prevention of bacterial contamination of raw meat and poultry products...Many homemakers are unaware of the existence in the environment and human body of the intrinsic sources of food poisoning types of bacteria.

"The application of ordinary sanitary practices will prevent many foodborne diseases in the home. Their occurence is largely the result of apathy, poor judgement, carelessness, or inadequate knowledge of the proper way to handle foods."

[Based on the report, "Consumers' Knowledge, Opinions, and Attitudes Towards Safety in Selected Food Items," by Judith L. Jones and Jon P. Weimer, National Economic Analysis Division.]

A New Kind of Raisin

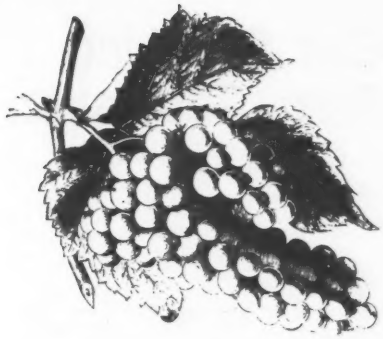
Those familiar bluish-black raisins that fruit lovers have been nibbling since Biblical times may eventually be replaced by a new kind of raisin—greenish-amber, moister, softer, and sweeter.

The traditional raisin has been produced for centuries by hand harvesting ripe grapes and spreading them on trays in the sun to dry—known as the natural method. In the recent years, however, high labor costs have caused producers to seek more efficient methods.

Four methods. In response to this need, ERS compared the costs of four basic methods of producing raisins, all of which are either in use or under experimentation in California—nearly all U.S. raisins are produced in the State, accounting for 25-40 percent of the world's production each year. These methods include:

Natural. By far the most popular way of producing raisins, the natural method relies heavily on hand labor during the approximately 30-day harvest. After drying in the sun, the raisins are dumped into "sweat" boxes, where they achieve a uniform level of moisture. Because of the long drying time in the field, this method involves considerable risk to the grower from quality loss due to possible rain damage and physical loss from insects, rodents, and birds.

Dehydration. Small amounts of California raisins are produced commercially by this method, in which fresh, hand harvested grapes are dipped in a caustic soda solution—causing the grapes to crack—and dehydrated in counterflow air tunnels heated by gas. After dehydration, the raisins are handled the same as natural raisins—they're transported



from the farm to a processing plant for cleaning, grading, and packaging.

Continuous Tray. Used commercially on a handful of acres, the continuous tray method involves drying the grapes by cutting the canes of the grapevines 4-6 days prior to harvest. The grapes are then mechanically harvested and directed into a device which deposits the individual berries onto a continuous paper tray automatically laid behind the harvester. The raisins are then picked up and put into sweat boxes for later delivery to the packaging house.

Dried-On-The-Vine (DOV). Originally developed in Australia, the DOV method allows the grapes to dry on the vines, after which they are harvested mechanically, placed in sweat boxes, and taken to the packing house for processing. As with the continuous tray method, the fruit-bearing canes are cut to initiate drying. Since this operation alone doesn't dry the grapes fast enough, they are also sprayed with a solution that accelerates drying.

Raisins produced by this method—experiments are being conducted by California State University at Fresno in cooperation with USDA—are mostly greenish-amber in color and are moister, softer, and sweeter than natural raisins.

Least costly. ERS found that with 1974 prices for labor and other inputs, the continuous tray method was the least costly, followed by the natural, DOV, and dehydration methods.

Since the continuous tray method is only in trial usage at this time, whereas the more expensive natural method is used almost exclusively, it's obvious that costs alone don't determine which method will be used. To capture a large share of the market, however, raisins produced by other methods must be competitive in price with natural raisins, as well as being acceptable to buyers and consumers.

DOV evaluation. Since the DOV method was only slightly more expensive than the natural method, ERS decided to get a consumer evaluation of raisins produced by this procedure. (A consumer survey of raisins produced by the continuous tray method-found to be the least expensive in this experiment—was conducted in 1973. Those surveyed found the continuous tray raisins indistinguishable from natural raisins.)

DOV raisins were tested by a statewide consumer panel in Michigan in the spring of 1974. The evaluation included both a taste acceptance and a home placement test.

Special marketing efforts. Results showed that DOV raisins were rated higher after home placement testing than at the taste panel sessions, indicating thatspecial marketing efforts would probably have to be made to assure consumers that these raisins are made from the same variety of grapes as natural raisins, even though they have a lighter color, softer texture, and are slightly sweeter.

Older homemakers (over 60) especially liked the DOV raisins, perhaps because they're moister and softer than natural raisins. Homemakers under 30 and those with children under 12 liked them the least. Marketers will have to find out why the younger homemakers found the DOV raisins less appealing,and what might be done to improve this situation.

Dark raisins a drawback. Consumers found the variability in color of the DOV raisins disturbing—although most are a greenish-amber, a few are similar to the blue-black color of natural raisins. The darker raisins are the result of grapes not being covered by the spray solution during the DOV process. These raisins lose moisture slowly, and if exposed to direct sunlight while drying, turn dark.

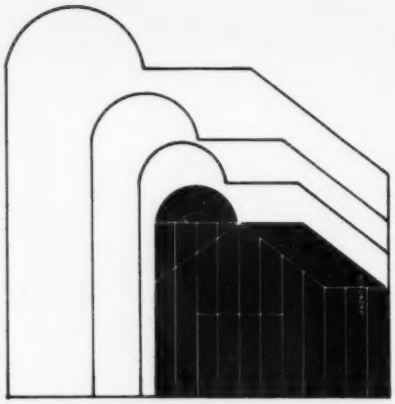
In order for the DOV raisins to become widely accepted by cunsumers, it might be necessary to sort out the darker raisins before packaging them for the retail market. Costs, however, might make this practice prohibitive.

Conclusions. Overall, the ERS study found that :

- In the near future, the natural method of producing raisins in California will continue to be the dominant method.
- Increases in the cost of farm labor and /or decreases in the costs of spray materials eventually could result in a shift to the DOV method.
- Any shift is likely to be gradual, allowing an easier transition of displaced farmworkers to other industries.

[Based on "Dried-On-The-Vine Raisins: Evaluation of a New Technology," manuscript by Robert V. Enochian, National Economic Analysis Division, Albany, California; Mary D. Zehner, Extension Specialist in Agricultural Economics, Michigan State University; Stanley S. Johnson, Commodity Economics Division, Davis, Calif.; and Vincent E. Petrucci, Professor of Viticulture, California State University.]

Our Shrinking Farm Population



Wherever they've set up housekeeping, it's a good bet that most of the back-to-the-country denizens of the 1970's have bypassed the Nation's farmsteads.

The U.S. farm population, according to a recent report by ERS and the Bureau of Census, suffered a net loss of nearly 850,000 in 1970-75, years when population growth in nonmetro counties outstripped the metro counties for the first time since the mid-1930's.

In 1975 alone, the number of farm residents shrank by some 400,000 during the 12-month period entered on April. This brought the count to around 8.9 million, the fewest since they started keeping records in 1910.

In fact, the 1975 loss was the largest in 5 years.

Decline tapering. An ERS demographer, however, cautions not to attach too much importance to 1 year's decline, but to look at longer-range trends instead. They indicated that the rate of decline in the farm population is slackening, having dropped from an annual average of 4.8 percent in 1960-70 to 1.8 percent in 1970-75.

"The drop in farm population," the demographer said, "reflects the steady increase in mechanization and other technological advances that enables agriculture to do its job with fewer people spending fewer manhours of labor.

"Certainly, people want to live on farms today. The problem is that many farms that have become available through death or retirement of previous farmers are not big enough to be operated as efficient units by younger farmers. These are often bought or rented for enlargement of existing farms. Many farms are still not as large as they might be, given today's state of technology, so we can expect continuing pressure on numbers of farms."

The "farm population"—who are they?

Agriculture a sideline. Contrary to popular image, a sizable number of farm residents don't depend on agriculture for a living. Last year, only 52 percent of the 4.1 million employed persons living on farms were engaged solely or primarily in agriculture.

This comes as little surprise, considering how USDA and the Bureau of Census define a "farm." It's a place of 10 or more acres with annual farm product sales of at least $50, or a place of fewer than 10 acres with sales of at least $250 a year.

Meantime, we know that—in terms of race—blacks make up a decreasing share of the Nation's farm population. They accounted for only 7 percent of all farm residents in 1975, down from 10 percent in 1970 and 16 percent in 1960.

And in the 5 years after 1970, the black farm population dropped 35 percent, and the white farm population, only 6 percent. A chief reason: the sharp reduction in numbers of tenant farmers raising cotton and tobacco. Most tenant farmers are black.

Sex breakdown. By contrast to the total civilian population, men outnumber the women among farm residents. In 1975 the ratio was 107 males to 100 females living on farms, versus 93 to 100 for the total U.S. civilian population. ERS attributes the difference to a higher rate of out-migration of women on farms plus the predominately masculine nature of farm work.

Farm families are somewhat above average in size. In 1975, 13 percent had six or more members, against 10 percent for nonfarm families.

Farm families last year had more children under 18 than nonfarm families: 2.33 children compared with 2.08 for the nonfarm population.

Fertility rates. Not only do farm families have more children, but they also tend to maintain the fertility rate. In June 1975, every 1,000 married farmwomen aged 14 to 39 expected to have 2,934 children. Nonfarmwomen expected to bear 2,482.

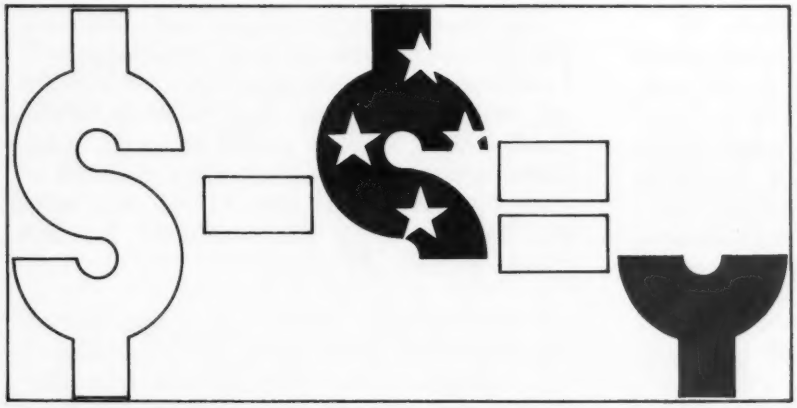
Farm families have more elderly folks in their household than those not on farms: Twenty-three percent of farm families reported members 65 and over in 1975, against 17 percent for nonfarm families.

Despite the economic recession of 1975, farm residents fared okay on the job market. Their rate of unemployment—people without work but looking—was 3 percent, compared with 8.6 percent for the rest of the population.

On the income scale, the farm population still lags, but the gap is narrowing. The median income was $10,430 in 1974, and $12,930 for nonfarm families. However, since 1970 the median income of farm families rose 21 percent, and only about 2 percent for nonfarm families.

[Based on *Farm Population of the United States: 1975,* by Vera J. Banks, Economic Development Division, and Diana DeAre, Bureau of the Census; and special material from Calvin Beale, Economic Development Division.]

Tax Credits Help Working Poor



Death and taxes are certain, according to the old adage. But tax laws that give back money, other than excess withholdings from paychecks, are indeed the exception.

However, the Tax Reduction Act of 1975 made it possible for certain low-income families—many of whom live on farms—to receive earned income credits on their 1975 tax return. And many can expect to receive some benefits on their 1976 bill, too, as the provision was extended into the first half of this year.

A first of its kind, this income maintenance program is geared toward increasing the disposable income of the working poor. Tax relief under the program for 1975 is estimated at around $1.5 billion.

Here's how the earned income credit program works:

A head of a household with at least one dependent child can claim a tax credit of 10 percent for the first $4,000 of taxable earned income. (A married person must file a joint return.) For each dollar of adjusted gross income in excess of $4,000, the tax credit is reduced by 10 cents. Thus, to get the benefits, your adjusted gross income cannot exceed $8,000.

What sets the earned income credit approach apart from other tax credits is that it is not limited to the amount of income tax liability. To illustrate, if a family's Federal tax bill is $110 and they are able to claim $150 as an earned income tax credit, then they will receive a direct payment of $40.

Who are these families and where do they live?

According to a simulation analysis conducted by ERS, Southern families, particularly those living in rural areas, appear to benefit most from the tax provision. The analysis indicates that the South accounts for 31 percent of the families, with 43 percent of the earned income credits coming their way.

And nationally, rural families tend to get a bigger share than their city cousins. Simulation results show that rural nonfarm and farm families account for only about 26 percent of all families, but share in almost 34 percent of the benefits. These figures are not surprising in that rural areas tend to have more working poor in their low-income populations than do cities.

Families with total annual incomes of $4,000-$8,000 receive the biggest chunk of benefits—about 56 percent, or over 3 times their representative share of the population. Families in the under-$4,000-bracket come in for a little over 18 percent of the earned income credits, only slightly more than their numbers would indicate.

This leaves over a fourth of the benefits for families with total annual incomes over $8,000. Although $8,000 is the stated cutoff for such benefits, only taxable earned income (wages, salaries, tips, other employee compensation, and self-employment income) is counted toward the limit. Therefore, through Social Security payments, sick pay, etc., total money income could be higher.

Also, a subfamily can be eligible for earned income credits even though the whole family's income exceeds $8,000. For example, a young married couple with eligible dependent children living with parents can earn less than $8,000 a year and still be eligible for benefits, even if their income plus the parents' is over the limit.

Although the bulk of the program's benefits reach families making at least $4,000 a year, the program appears to hit its target audience—the working poor who need financial help.

[Based on the manuscript, "Earned Income Tax Credit: Impact on Nonmetro People," by Thomas A. Carlin, Economic Development Division.]

U.S./U.S.S.R. Agricultures ..How They Measure Up

Dear Carl,

Since moving to Washington 2 short months ago, I've discovered that one of the benefits is being able to lay your hands on practically any type of research. Your request for facts on U.S. vs. Soviet agriculture at first seemed like an impossible assignment, but you'll be happy to know I managed to come up with the goods.

Alas, the study itself is not yet off press. However, the people at U.S.D.A.'s Economic Research Service allowed me to take notes from their manuscript copy, and this should arrive in time to be incorporated in your term paper.

First, the wide gap between Soviet and U.S. Agriculture has narrowed. But we're still way ahead of them in farm efficiency, crop yields, livestock productivity, value of production, output per person, use of fertilizer and farm equipment -- to name just a few.

Take farm equipment. The Soviets have one tractor for every 265 acres of cultivated land, versus one for 88 acres in the U.S. And they have only one combine to cover 460 acres in small grains, whereas U.S. farmers have one for 150 acres.

Too, Soviet tractors don't last long, only 8 or 9 years compared with 15 in our country. On the other hand, Soviet tractors average 60 horsepower, about a fourth more than U.S. machines.

The Soviets use only about two-thirds as much mineral fertilizers (nitrogen and phosphates) per acre of arable land as American farmers. But the U.S.S.R.'s fertilizer use has been growing by leaps and bounds in recent years, and by 1980 it may equal or top ours if the current 5-year plan meets its goal.

A few words about differences in agricultural resources of the two countries. Even though the Soviet Union has about 2½ times more land than the U.S., only about a fourth is suitable for agriculture in the U.S.S.R., against roughly half in the U.S.

The U.S. also has better weather conditions for agriculture. The Soviets can expect severe droughts every 3 years, and only 1 year out of 3 or 4 can be considered favorable as weather goes.

Furthermore, only about 40 percent of the U.S.S.R.'s arable land lies in areas having an average temperature of over 40° F. In the U.S. the proportion is nearly 90 percent. Thus, besides the drought problem, the U.S.S.R. is handicapped by a much shorter growing season and frost-free period than most of our areas.

Had you been born in Russia, chances are that you'd be working in agriculture. More than a fourth of the Soviet labor force make their living

that way (here, it's only 4 percent!). Many are women -- about 45 percent of the Soviet labor force, compared with just 15 percent in the U.S.

Working in Soviet agriculture, though, you wouldn't have a farm of your own. State farms -- numbering around 18,000 and averaging 47,200 acres in size -- occupy about half the total cultivated area of 560 million acres. Most of the rest is farmed by 28,600 collective units, which average around 16,000 acres. In the U.S. we have some 2.8 million farms, averaging somewhat less than 400 acres.

Russia's "private" plots (tilled by collective and state farmers in their spare time) account for only 3 percent of the sown acreage. Yet they managed to produce around a third of the U.S.S.R.'s vegetables in 1974 and close to two-thirds of the potatoes, plus a high proportion of the country's meat, milk, eggs, and wool.

Comparing management of Soviet and American farms is difficult because of the great contrasts in size, organization and economic systems. Suffice it to say that Soviet farm managers often must respond to directives from the Soviet Government, rather than make their own decisions based on such indicators as consumer demand.

The present Soviet regime is increasing the level of inputs, and improving incentives for the rural labor force. Yet our own farm efficiency, measured in terms of output per unit of input, remains substantially higher for land, livestock, and labor. (Former U.S. Secretary of Commerce, Peter G. Peterson, found that in the U.S.S.R., one farmworker feeds only 7 people while in the U.S., a farmer feeds 52.)

Moreover, despite greater inputs of land and labor, the value of Soviet agricultural output is only about four-fifths that of American farmers. The Soviets also lag in yields of most crops.

The U.S. produces much more meat, eggs, fruit, corn, and soybeans than the U.S.S.R. On the other hand, Soviet production of milk, wheat, rye, barley, potatoes, and sunflowerseeds far exceeds ours.

The enclosed charts will give you some idea of how we compare with the Russians in terms of grain and livestock production, as well as grain yields.

Patterns of grain use in the two countries vary greatly. The U.S. uses only about half as much grain for food as the U.S.S.R. but almost a fourth more grain for livestock feed.

In the grain charts, note that we produce over a fourth more than the Soviets, even though their grain area is over 80 percent larger. Main reason is that high-yielding corn accounts for 60 percent of total U.S. grains production, whereas in the U.S.S.R., relatively low-yielding wheat (primarily spring wheat) accounts for almost half the grain crop.

In per capita output, figures are much higher in the U.S. for fruit, meat, and corn for livestock feed. But the Soviets produce more wheat, milk, and potatoes per person. In both countries, food supplies are generally adequate, the big difference being the composition of diets.

Naturally, you'll want to include in your paper some mention of foreign trade. Trade in agricultural products is equally important to both countries, making up about a sixth of total trade. However, we're traditionally a net exporter -- world's largest -- of farm products, and the Soviet Union is a net importer. In 1974 American farmers exported 8 times more than the Soviets.

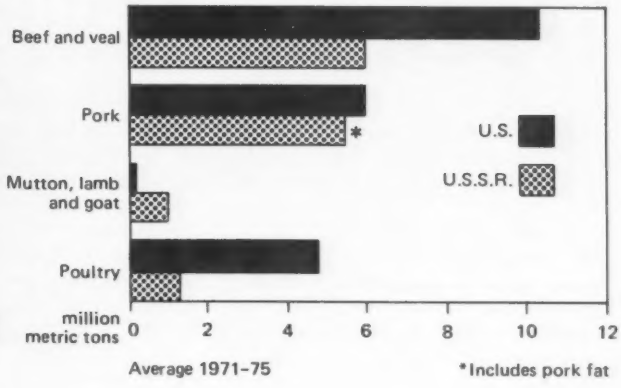
The Soviet Union has become a major, though extremely variable, market for U.S. grain in recent years. U.S. grain exports to that country ranged from lows of 2-3 million tons in 1971/72 and 1974/75 to highs of 14-15 million tons in 1972/73 and 1975/76. Corn made up about half, and wheat, most of the remainder.

Hope this gives you a bird's-eye picture of how U.S.S.R. agriculture stacks up with ours. Obviously, I didn't cover the waterfront in this letter, so be sure to write in for the complete report. Watch the Recent Publications section of the Farm Index (copy attached).

Regards,
Tom

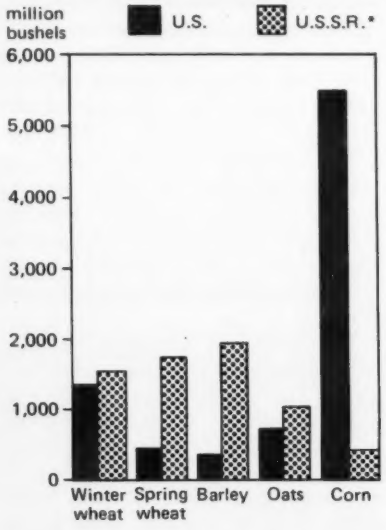
(Based on the manuscript, Agriculture in the United States and the Soviet Union, by Fletcher Pope, Jr., Foreign Demand and Competition Division.)

OUTPUT OF SELECTED LIVESTOCK PRODUCTS



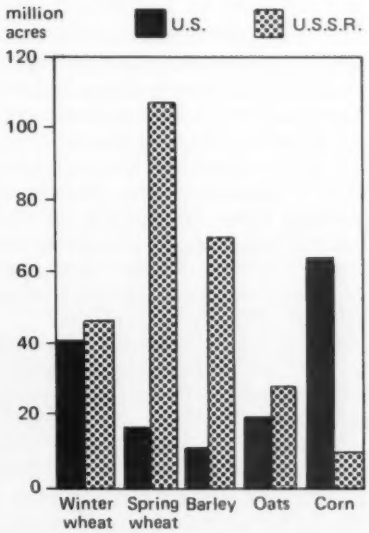
Average 1971–75 *Includes pork fat

GRAIN PRODUCTION



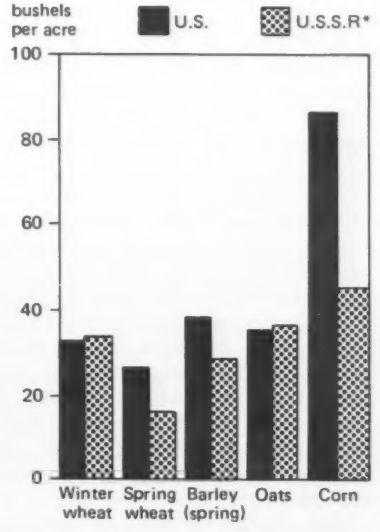
Average 1971–75 *In terms of bunker weight

GRAIN AREA



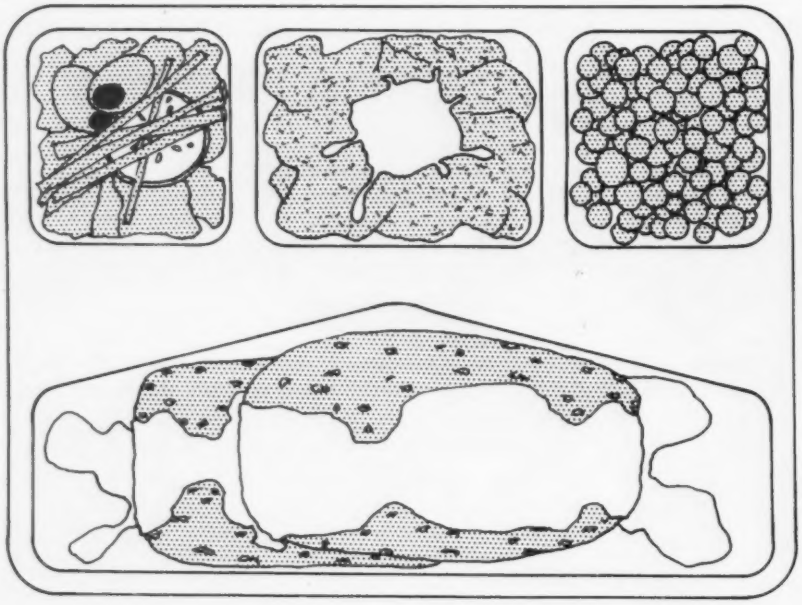
Average 1971–75

GRAIN YIELDS



Average 1971–75 *In terms of bunker weight

The Convenience Creep



Tired of cooking? Well, you're not alone–many of America's hotels, restaurants, and institutions are too.

With the high cost of labor, energy, equipment, and individual food ingredients, and the scarcity of skilled personnel in the labor force, more and more food managers are turning to convenience foods, or even caterers, as in the case of the airlines.

To find out how big a thing this is, ERS conducted a mail survey of 430 food processing firms selling their products to the hotel, restaurant, and institutional markets in 1973-74. A total of 138 firms sent back their questionnaires, and of these, 28 representatives were personally interviewed.

Convenience in demand. Results: the food service demand for convenience foods is indeed a big one—over $1.1 billion worth during 1973-74 for the 138 companies alone. And over 35 percent of this demand was met by the 12 largest firms in the survey.

Slightly under half the companies sold primarily to the foodservice market, with 40 percent of this product line made up of convenience foods. In terms of dollar value, convenience items accounted for half the sales of all the firms surveyed.

The processors were divided nearly in half as to their major markets-retail stores of foodservice outlets. One-third of the firms also sold to the industrial sector (other food processors or assemblers), but these sales didn't add up to more than a fifth of the estimated annual sales of any one firm.

No. 1 customers. In the restaurant market, table restaurants and cafeterias were the No. 1 customers of convenience foods. Hotel and motel dining rooms were next, followed by fast-food operations, caterers, and airlines.

Schools and colleges were the biggest users of convenience foods among institutions, trailed by hospitals, in-plant feeding operations, correctional institutions, and the military.

The survey also turned up some revealing facts about innovation and customer acceptance of new convenience foods. According to the food processors surveyed, 5,299 convenience products were introduced during 1968-73, and 1,065 were discontinued.

Of the new products, half were either mix-and-serve or heat-and-serve items; slightly over one-fourth required additional cooking; and the rest were either thaw-and-serve or table ready. The majority of the foods—two-thirds—were frozen.

More entrees. By food category, entrees headed the list, accounting for nearly two-fifths of the convenience items introduced during the period. Cakes and pastries ranked second, with side dishes third, and dinners fourth.

Discountinued products spanned all categories, but entrees made up a third. The second largest group was the "all other." Of these products, nearly two-thirds were meat items, such as meat rolls, specialty products, and portion-control boxed cuts. Most of the rest were ethnic foods.

How do all these new products come about, and who determines their life spans? Usually, it's the final user who accepts or rejects an item, as well as providing some input for new food ideas.

According to the survey, around 30 percent of the ideas for new food forms came from outside the processing firm. About 45 percent were taken from trade shows, meetings, and magazines; 25 percent were bought from other research firms; 18 percent were obtained through acquisitions; and nearly 10 percent were derived from Government research.

Receptivity index. And how receptive are the potential buyers of these new foods? Obviously, it varies among users, but most will at least try a new product if they can be assured of four things:

(1) A highly skilled chef will not be needed.

(2) Time between preparation and serving will be cut.

(3) The food is savory.

(4) A profit will be realized.

However, as the survey turned up, some groups in the foodservice industry are more receptive to innovation than others—a situation which keeps the food processors hopping to come up with just the right product to be marketed in just the right way.

The most receptive clients, the survey noted, were hospitals, schools, and colleges. Traditionally budget-strapped, these institutions are faced with trying to vary low-cost meals for people who eat all, or nearly all, their meals at the institutions.

Schools adventurous. Schools and colleges seem a bit more willing to experiment with new foods than do hospitals. By using unique foods (such as a fad foods), plating techniques, and efficient service, they are able to lure more students into dining halls.

Hospitals are coming around some too. They are loosening up on the strict notion of the "Basic Four" in their meals and turning to meal planning along the lines of the recommended dietary allowances. Also, they are looking for ways to make special diets—such as ones low in sodium, fat, or calories—more appetizing to their patients.

The airlines are another receptive group. Since most passengers prefer to eat on planes, meals have become a form of competition as the various airlines look for ways to set their meal services apart. An eye to rising costs, however, has sparked a greater interest in low-cost foods, such as casseroles and cold dishes.

Fast foods diversify. The fast food market is fertile ground for new food items stressing sheer convenience, and is becoming more attentive to products which add variety to the standard fare. For example, some operators have added salad bars or self-service tables and expanded their menus.

The survey also noted that independent family and fine dining restaurants are in the market for new foods. To attract families, these establishments must continuously come up with new ideas, new ways of presenting old ideas, and good quality. A major stumbling block to these goals, however, is the high cost of labor—hence the increasing interest in convenience foods and even automation.

Now that Uncle Sam is in the business of recruiting for the all-volunteer armed forces, the military is taking an interest in sprucing up its meal services. And the stereotyped mess hall is definitely taking on a new look, as today's recruits expect to find the same foods they enjoyed as civilians.

Last holdouts. Even the last holdouts against innovation—the correctional institutions—are changing. Since about 1970, the American Correctional Food Service Association has been trying to improve food service in these institutions, under the premise that well-fed inmates are more cooperative inmates. Menu variety is a main goal, since the audience is literally a captive one, eating all meals inside.

As the processing firms in the study see it, the future for convenience foods in the foodservice industry looks good. Only a few processors expect a decline in demand for any single convenience food form by 1980.

Frozen products which require some degree of heating before serving got the nod as the "greatest growth area" through 1980. Portion control foods, in the opinion of nearly 70 percent of the firms, will also increase in demand.

On the other hand, freeze dried, dry-mixed, fresh, and canned forms frequently drew a "will remain the same" response.

[Based on *Convenience Foods for the Hotel, Restaurant, and Institutional Market: The Processor's View* (AER-344), by Harold R. Linstrom and N. Seigle, National Economic Analysis Division.]

Developing Nations: Hot Future Markets

Intuitive U.S. farmers are keeping a close eye on some of their most promising customers—developing nations. This fiscal year, U.S. agricultural exports to these countries should be about $1 billion more than fiscal 1976's level of $7.3 billion.

In 1975 the top 10 agricultural importers of the developing world (total imports from all countries) were India, Egypt, South Korea, Iran, Brazil, Mexico, Taiwan, Iraq, Saudi Arabia, and Indonesia. This year, for the second time in a decade, India will lose its status as the leading importer—outpaced by Egypt and Korea.

Growth of OPEC countries. The three super-rich countries of the Organization of Petroleum Exporting Countries (OPEC)—Iran, Saudi Arabia, and Iraq—have streaked into the limelight of world trade since 1973. Total agricultural imports of each of these countries should exceed $1 billion this year, in contrast to less than $250 million each in 1971. While the U.S. share of their total agricultural imports is declining, the OPEC countries are still rapidly growing markets for American farmers.

It now appears that any of these six developing countries—Egypt, Korea, India, Iran, Saudi Arabia and Iraq—could become a $1 billion market for U.S. farm products before 1980. In fiscal 1975, U.S. agricultural exports to South Korea reached $885 million, and shipments to Iran peaked at $757 million. Exports to these two markets have been down in 1976, but a rebound is expected. U.S. farm exports to India reached a record $760 million in 1975, and shipments to Egypt rose to $425 million.

New sales opportunities. In Egypt, Korea, Iraq, and Saudi Arabia, the rapid growth in urban population, higher living standards, and better food distribution facilities will spur a demand for imported farm products. U.S. exporters should watch these countries to spot profitable new sales opportunities.

As incomes climb and urbanization influences dietary preferences, the demand for certain food items in the developing countries will rise faster than others. Hot items will likely be U.S. frozen poultry, pulses, dairy products, oilseeds, fruits, nuts, fruit products, and vegetables.

This year, U.S. farmers will be shipping significant amounts of wheat, wheat flour, and vegetable oils to Egypt; rice and frozen poultry to Iraq, Saudi Arabia, and Egypt; wheat, sorghum, cotton, and rice to India; and cotton, wheat, rice, corn, and soybeans to Korea.

Import demand of the Big Three. The three major agricultural importers of the developing world had many things in common during the past 3 years. Import demand in Egypt, Korea, and India was influenced by the following factors:

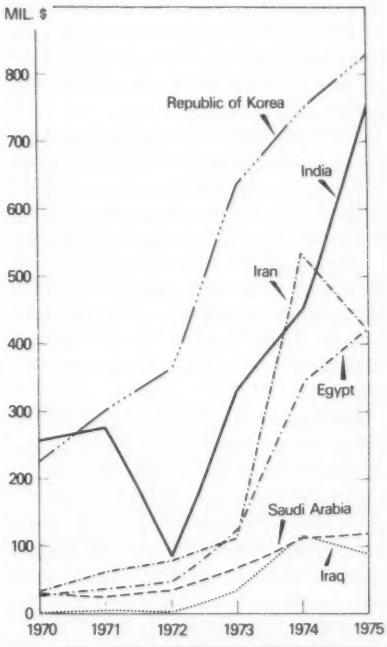
- Rapid population growth occurred in urban centers of over 3 million people, where a large amount of the food supply was imported.
- Agricultural imports were dominated by cereals—80 percent for India, 68 for Egypt, and 59 for Korea.
- Total imports were higher than exports and the shortage of foreign exchange was a major constraint upon agricultural imports.
- Inflows of foreign exchange from financial arrangements, investments, technical contracts, and workers abroad helped lessen the balance of payments gap.
- The demand for imported livestock products and semi-luxury foods remained unsatisfied.
- Programs to expand total exports included plans for larger imports of agricultural raw materials.
- Trade policies indicated a greater emphasis on exports of labor-intensive crops and less concern for food self-sufficiency. Larger grain imports to calm domestic inflation were viewed favorably.

OPEC imports. Factors that influenced agricultural imports by the OPEC members during this time were:

- Spectacular gains were made in petroleum revenues.
- New programs were initiated that resulted in wider income distribution, especially for people in major cities.
- Per capita income rose at a striking rate.
- Subsidies were granted for imports of basic cereals to reduce consumer prices.
- New food marketing and distributing systems were developed.
- Large contracts for wheat, wheat flour, rice, and oilseed products tended to go to the U.S., while many smaller orders for livestock products, fruits, and vegetables were usually filled by European, Australian, and Asian supplies.
- Imports of surprisingly large volumes of agricultural commodities with higher income elasticity, such as beef, frozen poultry, and cheese, appeared in 1975 and early this year.

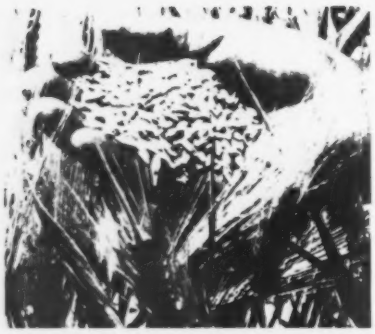
ERS assessment. Here's the ERS assessment of markets in these six developing countries—all of which have major implications for U.S. exports.

U.S. EXPORTS OF FARM PRODUCTS TO SIX DEVELOPING COUNTRIES



Egypt. Although Egypt is a growing market for U.S. farm products, other suppliers—mainly the European Community (EC) and Australia—compete heavily with us for their trade. The EC and Australia each ship about 1 million tons of wheat annually to Egypt, while the U.S. supplies roughly 1.5 million tons.

Development of modern poultry and cattle feeding operations—using American technology and OPEC capital—will generate a marked increase in imports of corn and soybean meal.



Egypt is the largest market for U.S. cottonseed oil, tallow, corn, and tobacco in the Mideast. However, competition from tobacco exporters in Greece, Turkey, Bulgaria, India, and Zambia promises to be more intense in the future.

South Korea. U. S. agricultural exports to South Korea increased from $743 million in 1974 to a record $830 million in 1975, making the country the sixth largest U.S. foreign market.

Over half Korea's agricultural imports last year were supplied by U.S. farmers, including all of the rice and wheat. Imports of U.S. cotton, soybeans, corn, and tobacco are rising.

Although the U.S. remains the predominant supplier of farm goods to Korea, imports from other countries have increased in recent years—particularly sugar and wool from Australia, rubber from Malaysia, tobacco from Yugoslavia, and corn and sorghum from Thailand and the Republic of South Africa.

India. Drought struck India in 1972, causing the country to increase agricultural imports. The largest gains were in wheat—for the past 2 years this commodity has accounted for about three-fourths of all agricultural imports. In fact, India remained ahead of the U.S.S.R. in fiscal 1976, taking 4.2 million tons of U.S. wheat, compared with 4.0 million tons by the Soviets.

Imports of U.S. wheat jumped from 1.9 million tons in 1974 to 4.6 in 1975. Other significant gains were in sorghum, blended foods, dry milk, and pulses. India has made a dramatic return as a market for U.S. cotton and soybean oil. This year, the country became a new market for U.S. peanut oil.

Iran. Although the U.S. continues to be a major supplier of Iran's agricultural imports, other countries have been inching their way into the picture—particularly Australia, New Zealand, Turkey, Brazil, Argentina, and India.

American farmers provided about 75 percent of Iran's grain imports last year, valued at about $317 million. Soybean oil, cottonseed oil, citrus, and livestock were other important imports from the U.S. Iran is also becoming more important as a market for U.S. tobacco and dozens of processed foods.

U.S. rice exports to Iran soared from about 189,000 tons in 1974 to 365,000 in 1975. So far this year, rice sales to Iran have only been about half of the peak 1975 level.

Iraq. Iraq was also a spectacular new market for U.S. rice in the last 2 years, reaching a record 150,000 tons in 1975. Yet, smaller shipments of wheat caused the value of total U.S. agricultural exports to Iraq to fall from a peak of $115 million in 1974 to $86 million in 1975.

A strong rebound in U.S. food sales to Iraq is now underway, although the U.S. share of total agricultural imports is likely to remain below the record 16 percent of 1974.

The Iraq Government recently signed a contract to purchase 40,000 tons of U.S. frozen chickens—valued at $40 million—and additional sales of American wheat, rice, coarse grains, tallow, and seeds are also anticipated. New sales of U.S. tobacco, soybeans, soybean meal, peanuts, and processed foods might also be possible.

Saudi Arabia. U.S. agricultural exports to Saudi Arabia averaged only $35 million annually during 1968-72, but reached a height of $150 million in fiscal 1976. Sales of U.S. wheat flour to Saudi Arabia increased markedly in 1975, despite the country's bumper wheat harvest of 193,000 tons—twice the size of their 1974 crop.

Australia recently signed a contract to send 200,000 tons of wheat annually to Saudi Arabia over the next 5 years, which may keep U.S. sales of wheat flour below the 1975 level. However, American exports of rice, animal feed, and processed foods to Saudi Arabia should continue to rise.

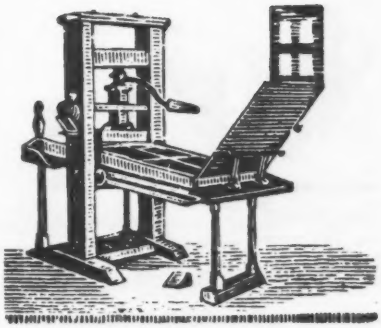
Total imports. Total agricultural imports by developing countries in 1976 will probably be about $2 billion more than in 1975, with larger imports by Egypt and South Korea accounting for about a third of the increase, and larger imports by the OPEC countries making up another third.

U.S. agricultural trade with developing countries should continue to rise this year, with strong gains in sales to Korea, Egypt, Iraq, and Saudi Arabia. Exports to India and Iran might be down slightly, although concern about upward movements in world commodity markets could cause the two countries to make larger purchases of U.. farm products later this year.

[Based on "Expanding Agricultural Imports by Major Developing Countries and Implications for U.S. Exports," paper presented at the annual meeting of the American Association of Agricultural Economics, Pennsylvania State University, August 1976, by John B. Parker, Foreign Demand and Competition Division.]

Recent Publications

Single copies of the publications listed here are available free from The Farm Index, Economic Research Service, Rm. 1664–So., U.S. Department of Agriculture, Washington, D.C. 20250. However, publications indicated by (*) may be obtained only by writing to the experiment station or university. For addresses, see July and December issues of The Farm Index.



Agricultural Development in Kenya Since 1967. Lawrence A. Witucki, Foreign Demand and Competition Division. AER-123.

The agricultural sector of Kenya's economy and the structure of its production units are briefly described in this publication. Of particular interest are production patterns of the major agricultural commodities during recent years and the development of small holder tea and hybrid corn production. Changes in agricultural prices, production, and trade are also analyzed.

Land Use Policy and Agriculture: A National Perspective. Melvin L. Cotner, Natural Resource Economics Division. ERS-630.

More new cropland is developed each year in the U.S. than is lost to urban development, according to this report. While 1.3 million acres are added to the Nation's cropland base each year, only about 500,000 are lost to urban uses. However, urban development combines with other uses such as parks, highways, and reservoirs to compete for 2.7 million acres of cropland a year, resulting in a 1.4-million-acre net cropland loss each year—a mere chip off the Nation's cropland base of 382 million acres. Besides, generally rising productivity levels have more than made up for the loss, says the report.

Operations of For-Hire Livestock Trucking Firms. Patrick P. Boles, National Economic Analysis Division. AER-342.

The third in a series on the economics of livestock transportation, this report is based on a survey of livestock truckers in the fall of 1974. Operating characteristics taken into account are: vehicle use, seasonality of livestock shipments, loss and damage claims, rates charged, the backhaul situation, nonlivestock trucking activity, and the effects of the fuel shortage.

Characteristics of Sheep Production in the Western United States. C. Kerry Gee and Richard S. Magleby, Natural Resource Economics Division. AER-345.

Two sample surveys undertaken in 17 western States gathered data on commercial sheep operations. According to the survey findings, 80 percent of all sheep raised in the U.S. grazed in these western States. About half of the grazing areas are Federal ranges. As sheep production continues to decline and as older sheep producers retire, more incentives are needed to encourage new sheep operations in these States.

Analyzing the Impact of Government Programs on Crop Acreage. James P. Houck, Martin E. Abel, and Mary E. Ryan, University of Minnesota; Paul W. Gallagher and J.B. Penn, Commodity Economics Division; and Robert G. Hoffman, Treasury Department. Tech. Bul. 1548.

This study suggests and analyzes a relatively simple method for incorporating the effect of Government programs into analyses of acreage response. "Effective support prices" are derived by adjusting Government-announced price supports for agricultural crops to reflect the stringency of acreage controls imposed on growers as a condition for obtaining the price supports.

Target Price and Loan Rate Concepts for Agricultural Commodities. J. B. Penn and W. H. Brown, Commodity Economics Division. ERS-631.

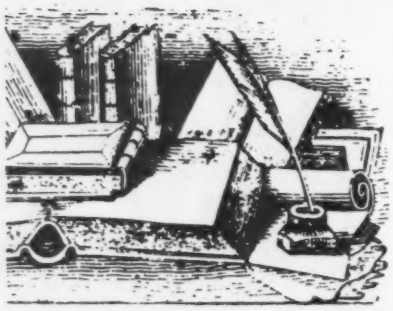
This report is an aid to understanding current Federal laws regarding U.S. agricultural commodities. Concepts are defined, provisions explained, computation formulas presented, ranges of payments shown, and examples are given to explain the applicable laws.

The Agricultural Situation in Africa and West Asia. Foreign Demand and Competition Division. FAER-125.

African crops in 1975 were affected adversely by dry weather, political unrest, and civil war. On the whole, agricultural production dropped slightly in Africa, although food production held steady. In West Asia, total agricultural output increased by 6 percent, exceeding the long term annual average increase of 3.19 percent.

Convenience Foods For The Hotel, Restaurant, and Institution Market: The Processor's View. Harold R. Linstrom and N. Seigle, National Economic Analysis Division. AER-344.

Foodservice operators are switching to convenience food products to offset rising labor costs, according to a survey of 138 convenience food processing firms. Entrees were the most popular convenience foods introduced, while cakes and pastries ranked second. Although heat-and-serve and portion-control foods were indicated by those surveyed as the largest growth areas for convenience foods in the hotel, restaurant, and institutional markets, frozen convenience products



are expected to register the greatest sales increase over the next few years.

The Agricultural Situation in the People's Republic of China and Other Communist Asian Countries. Foreign Demand and Competition Division. FAER-124.

The agricultural output in four Asian Communist countries fell below expectations. In the People's Republic of China, even though record harvests were recorded, production fell short of goals. Agriculture stagnated in the Mongolia People's Republic. A mixed picture also comes from the Democratic Republic of Vietnam (North Vietnam), which experienced a slight drop in crop production, but an increase in livestock production. In North Korea, harvest production set new records, but still fell somewhat below levels anticipated. This points to limited opportunities for U.S. exports of farm commodities.

U.S. Fresh Market Vegetable Statistics, 1949-75. Joan Pearrow, Commodity Economics Division. SB-558.

This compilation of tables serves as a basic reference in the U.S. fresh vegetable industry, providing a wide range of production, price, foreign trade, and other benchmark data. The data are current through February 1976, and generally cover the 1949-1975 period. The statistics serve as a supplement to the *Vegetable Situation,* published four times a year by ERS.

Mexican Competition for the U.S. Fresh Vegetable Market. Richard L. Simmons, James L. Pearson, and Ernest B. Smith, Commodity Economics Division. AER-348.

In recent years, Mexico has been a strong competitor in the U.S. fresh vegetable market, striking particularly at Florida's vegetable industry. But last year the indications were that the trend has reversed itself, largely due to improved weather conditions in Florida, and because Mexican exports were reduced significantly. Mexico's traditionally lower farm labor costs are increasing, and that cost advantage is being lost. Florida producers will likely retain their lead, and perhaps improve upon it.

Trade-offs Between Farm Income and Selected Environmental Indicators: A Case Study of Soil Loss, Fertilizer, and Land Use Constraints. James Kasal, Natural Resource Economics Division. Tech. Bul.-1550.

Reduced farm income can be expected when constraints on production methods are used to achieve improved environment. The consequences of that reduced income may necessitate offsetting measures, such as large incentives or severe penalties. This report studies constraints on soil loss, on fertilizer use, and constraints meant to diversify land use.

Analysis of Grain Reserves, A Proceedings. David J. Eaton and W. Scott Steele, Foreign Demand and Competition Division, in cooperation with the National Science Foundation. ERS-634.

This document contains papers which were presented at a Conference on the Systems Analysis of Grain Reserves in Philadelphia, Pa., in April. The conference, jointly sponsored by the Operations Research Society of America (ORSA) and The Institute of Management Sciences (TIMS) brought together researchers currently studying grain reserves. Eleven papers are included in this compilation: five concerning world grain reserves, and six on national grain reserves.

The Agricultural Situation in the Western Hemisphere—Review of 1975 and Outlook for 1976. Foreign Demand and Competition Division. FAER-122.

Last year's U.S. agricultural trade with the Western Hemisphere countries—Canada, Mexico, the Caribbean Islands, and Central and South America—fell below 1974 record highs. According to this report, imports fell from $4.6 billion in 1974 to $4.1 billion while exports fell from $3.8 billion to $3.6 billion. Agricultural production recovered sharply in Canada and Mexico, but suffered serious setbacks from adverse weather in the Caribbean, Central America, and in many South American countries.

Agricultural Finance Statistics. National Economic Analysis Division. AFS-3.

This annual publication provides data on the financing of agriculture in the U.S. In this issue, the total farm real estate debt contains substantial revisions caused by (1) the inclusion of insured loans of the FmHA with loans of that agency, rather than with loans of other lenders as was previously done, and (2) a change in the method used for estimating loans held by individuals and other lenders.

Economic Trends

[1]Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2]Average annual quantities of farm food products purchased by urban wage earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. [3]Annual and quarterly data are on 50-State basis. [4]Annual rates seasonally adjusted second quarter. [5]Seasonally adjusted. [6]As of March 1, 1967. [7]As of March 1, 1975. [8]As of November 1, 1975. [9]Beginning January 1972 data not strictly comparable with prior data because of adjustment to 1970 Census data.

Source: U.S. Dept. of Agriculture (Agricultural Prices, Foreign Agricultural Trade, and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report, and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale and Consumer Price Index).

Item	Unit or Base Period	1967	1975 Year	1976 Aug.	1976 June	1976 July	1976 Aug.
Prices:							
Prices received by farmers	1967=100	—	186	194	196	195	187
Crops	1967=100	—	201	212	211	215	201
Livestock and products	1967=100	—	172	180	184	179	175
Prices paid, interest, taxes, and wage rates	1967=100	—	181	184	195	196	195
Family living items	1967=100	—	166	169	175	177	177
Production items	1967=100	—	182	186	199	199	198
Ratio[1]	1967=100	—	102	105	101	99	96
Wholesale prices, all commodities	1967=100	—	174.9	176.7	183.1	184.3	183.7
Industrial commodities	1967=100	—	171.5	172.2	181.3	182.6	183.6
Farm products	1967=100	—	186.7	193.2	196.5	196.9	189.3
Processed foods and feeds	1967=100	—	182.6	186.3	181.8	182.6	176.8
Consumer price index, all items	1967=100	—	161.2	162.8	170.1	171.1	—
Food	1967=100	—	175.4	178.1	180.9	182.1	—
Farm Food Market Basket: [2]							
Retail cost	1967=100	—	173.6	177.6	175.9	176.8	—
Farm value	1967=100	—	187.0	197.5	183.5	182.5	—
Farm-retail spread	1967=100	—	165.3	165.0	171.1	173.2	—
Farmers' share of retail cost	Percent	—	42	43	40	40	—
Farm Income: [3]							
Volume of farm marketings	1967=100	—	115	115	115	119	—
Cash receipts from farm marketings	Million dollars	42,817	89,563	7,812	7,814	8,100	—
Crops	Million dollars	18,434	46,661	4,210	3,751	4,200	—
Livestock and products	Million dollars	24,383	42,902	3,602	4,063	3,900	—
Realized gross income [4]	Billion dollars	49.9	98.2	—	99.6	—	—
Farm production expenses [4]	Billion dollars	38.2	75.5	—	75.7	—	—
Realized net income [4]	Billion dollars	11.7	22.7	—	23.9	—	—
Agricultural Trade:							
Agricultural exports	Million dollars	—	21,894	1,600	1,824	1,799	—
Agricultural imports	Million dollars	—	4,295	688	1,020	958	—
Land Values:							
Average value per acre	Dollars	[6]168	[7]354	—	—	—	[8]381
Total value of farm real estate	Billion dollars	[6]181.9	[7]370	—	—	—	[8]398
Gross National Product: [4]	Billion dollars	796.3	1,516.3	—	1,674.1	—	—
Consumption	Billion dollars	490.4	973.2	—	1,064.7	—	—
Investment	Billion dollars	120.8	183.7	—	239.2	—	—
Government expenditures	Billion dollars	180.2	339.0	—	362.0	—	—
Net exports	Billion dollars	4.9	20.5	—	8.1	—	—
Income and Spending: [5]							
Personal income, annual rate	Billion dollars	626.6	1,249.7	1,267.5	1,370.4	1,384.3	—
Total retail sales, monthly rate	Million dollars	26,151	48,702	49,774	53,847	53,205	—
Retail sales of food group, monthly rate	Million dollars	5,759	10,977	11,166	11,728	11,512	—
Employment and Wages: [5]							
Total civilian employment	Millions	74.4	[9]84.8	[9]85.3	[9]87.5	[9]87.9	[9]88.0
Agricultural	Millions	3.8	[9]3.4	[9]3.5	[9]3.3	[9]3.3	[9]3.4
Rate of unemployment	Percent	3.8	8.5	8.5	7.5	7.8	7.9
Workweek in manufacturing	Hours	40.6	39.4	39.7	40.2	40.2	39.9
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	4.81	4.82	5.15	5.19	5.20
Industrial Production: [5]	1967=100	—	117.8	121.0	130.1	130.4	—
Manufacturers' Shipments and Inventories: [5]							
Total shipments, monthly rate	Million dollars	46,449	82,724	85,210	94,244	94,265	—
Total inventories, book value end of month	Million dollars	84,655	146,574	146,583	150,911	151,778	—
Total new orders, monthly rate	Million dollars	46,763	81,351	85,137	95,596	95,146	—

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